

## IOWA HIGHWAY RESEARCH BOARD (IHRB)

*Minutes of September 26, 2014*

**Regular Board Members Present**

A. Abu-Hawash  
K. Jones  
M. Kennerly  
D. Sprengeler  
S. Okerlund  
R. Knoche  
R. Fangmann

T. Wipf  
W. Weiss  
D. Miller  
P. Assman  
K. Mayberry  
L. Roehl

**Alternate Board Members Present**

D. Sprengeler  
R. Stutt  
T. Hagan  
J. Thorius

### Members with No Representation

**Secretary – V. Goetz**

## Visitors

Maggie Sacco  
Dave Hemingway Turner  
Leighton Christiansen  
Linda Narigon  
Mark Dunn  
Dean Bierwagen  
Francis Todey  
Mike Nop  
Michael Kennerly  
Donna Buchwald  
Dan Sprengeler  
Dave Claman  
Sritharan  
Gordon Smith  
Andy Wilson

HS Infocus LLC  
 HS Infocus LLC  
 Iowa Department of Transportation  
 Iowa Department of Transportation  
 Iowa Department of Transportation  
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 ISU/InTrans  
 ICPA  
 FHWA

The meeting was held at the Iowa Department of Transportation Ames Complex, Materials East/West Conference Room, on Friday, September 26, 2014. The meeting was called to order at 9:00 a.m. by Chairperson Kevin Mayberry with an initial number of 12 voting members/alternates at the table.

## **Minutes**

### **1. No Agenda Modifications**

### **2. Motion to approve Minutes from the July 25, 2014 meeting**

**Motion to Approve by** 1<sup>st</sup> W. Weis 2<sup>nd</sup> K. Jones

Motion carried with 12 Aye, 0 Nay, 0 Abstaining.

### **3. Presented Mark Dunn with a Certificate of Appreciation award.**

### **4. FINAL REPORT, TR-614, “Structural Characterication of UHPC Waffle Bridge Deck and Connections”, Sri Sritharan, ISU/InTrans, (\$50,000)**

## **BACKGROUND**

Today there are more than 147,000 bridges in the United States that are structurally deficient or obsolete, with more bridges added to this list each year. Deterioration of the bridge decks is a leading cause for the obsolete and/or deficient inspection ratings of the bridges. The Departments of Transportation (DOTs) are challenged with replacing critical bridge components, particularly rapidly deteriorating bridge decks, during limited or overnight road closure periods.

To address this issue, a recent analytical study by the Federal Highway Administration developed a durable, prefabricated full-depth waffle deck system concept using UHPC. However, there were no experimental studies completed to characterize the system performance and constructability. Therefore, large-scale testing of the UHPC waffle deck concept was needed prior to deploying this new bridge deck in the field.

## **OBJECTIVE**

- Contribute to design an innovative and durable precast deck alternative using ultra-high performance concrete (UHPC) for accelerated bridge construction
- Evaluate the structural characteristics of the UHPC waffle deck, critical connections, and system performance using large-scale tests for implementation in a replacement bridge in Wapello County, Iowa
- Perform live load testing of the Wapello County, Iowa Bridge with waffle deck panels to validate the expected performance of the waffle deck panel system under moving loads.

**Motion to Approve by** 1<sup>st</sup> R. Knoche. 2<sup>nd</sup> A. Abu-Hawash

Motion carried with 12 Aye, 0 Nay, 0 Abstaining.

**5. TR-614, Implementation Discussion:**

Vanessa would like to outline if we have any ideas on how to move this project towards an implementation phase here at the Iowa DOT. There is a design guide through FHWA that can be used to help. In the United States we now have a steel provider in Iowa for the UHPC fibers this will cause more companies to go with the UHPC and drive the cost of the fibers down. Building deck panels will become more cost effective.

Ahmad stated we are not just looking at the waffle deck itself we are looking at the connection joint details because of cost and the more we use UHPC the material will become cheaper. We are looking at using it in joints and the other applications we are looking for is the overlay.

Dean is looking at trying UHPC on a project rather than putting it on a bridge, we do not have any experience using UHPC as an overlay and thought we would try it on a pavement approach. We do have a new project we are turning in next month, an ABC project using a modular components and plan on connecting the modular to filed cast joints.

**\*\*\*1 member joined the table. Total voting members = 13**

**6. FINAL REPORT, TR-670, "Iowa DOT Library Services, Collection, & Technology Assessment", Dave Hemingway-Turner, HS InFocus, (\$14,500).**

**BACKGROUND**

Library technology continues to change dramatically and staying ahead of the curve is vital to keep up with the changing expectations of researchers who expect ever faster, more comprehensive information and datasets to support their work. Researchers live in an instantaneous information society where they look to on demand digital results to their queries in the form of full text online sources, eBooks and easily searchable print collections.

Additionally, the investment the Iowa Department of Transportation Library has made, and plans for the future, must translate into value in the form of productivity, mission fulfillment and dollars saved. Promotion and protection of the library's information assets is essential.

The purpose of IHRB project TR-670 is to assist the Iowa DOT Library in developing and implementing meaningful improvements to their services and to the methods by which they are delivered, through technology enhancements. A disaster plan that fits seamlessly into the Department's facilities and information infrastructure protection plan aims to preserve and protect the library's collection, both physical and digital.

**Motion to Approve by 1<sup>st</sup> R. Fangmann.2<sup>nd</sup> K. Jones.**

Motion carried with 13 Aye, 0 Nay, 0 Abstaining

## **7. TR-670, Implementation Discussion**

### **8. Library Topics for new projects:**

Vanessa stated when we went through the voting process in February there were two items 1201 and 1202 that dealt specifically with funding for the Library and 1201 is specifically the one that talks about funding for the computers and the bar coding to get the Library updated. The recommendation is to wait on 1202 that is being worked on by an Intern working with Leighton on this so they will try to work on this in house. Right now 1201 is up for consideration from the board "The Library Service Collection Technology Equipment proposal and is asking for \$1600 - \$2400 dollars.

**Motion to Approve by 1<sup>st</sup> W. Weiss.2<sup>nd</sup> P. Assman.**

Motion carried with 13 Aye, 0 Nay, 0 Abstaining

**9. PROPOSAL**, Request for Continuation of HR-140, "Collection and Analysis of Stream flow Data", Jon Nania, USGS, (\$260,340)

### **BACKGROUND**

The proper and efficient design of highway bridges and culverts depends, to a considerable extent, on accurate hydrologic information. Additional importance has been given to accurate hydrologic data in recent years because of increasing emphasis on the environmental aspects of stream crossings.

The Office of Bridges & Structures obtains the necessary hydrologic information from several sources; however, roughly 80% of this information is obtained from the Water Resources Division of the United States Geological Survey (USGS), whereas, data concerning specific locations of interest to the Department of Transportation (Iowa DOT) are prepared by the USGS through a continuing, cooperative program between the Iowa DOT and the USGS.

Research project HR-140 was established July 1, 1968, by consolidating three separate research projects then under contract between the USGS and the Iowa State Highway Commission. For the USGS, Iowa Water Science Center, HR-140 funds three separate programs: (1) continuous-record streamflow-gaging stations in Iowa, (2) partial-record (creststage) gaging stations in Iowa, and (3) flood profiles of Iowa streams. The oldest of these three programs began operation in 1950; the other two began in 1957 and 1959.

The cooperative program is subject to annual renewal, and is supported with funds from both the Geological Survey (45%) and the Department of Transportation (55%).

### **OBJECTIVE**

The Iowa DOT has determined that it lacks the facilities, expertise and personnel necessary to conduct certain research, research implementation, analysis, technology transfer and education and it has determined that the United States Geological Survey (USGS) has the necessary facilities, expertise and personnel to conduct certain research, research implementation, analysis, technology transfer and education. Additionally, USGS is uniquely positioned to conduct said activities either because of the specialized character, complexity, experience and background, expertise and/or resources available to perform these activities.

## **DISCUSSION**

Q. The updating of the gauges that we have spoken about in the past, is this a continuing program?

A. We reallocated some funds within the program and made sure we would get at least two real time sensors each year.

**Motion to Approve by 1<sup>st</sup> A. Abu-Hawash. 2<sup>nd</sup> R. Knoche.**

Motion carried with 13 Aye, 0 Nay, 0 Abstaining

### **10. Iowa STIC- Every Day Counts Round #3 Initiatives, Andy Wilson, FHWA**

There was a national STIC webinar that FHWA interviewed eleven initiatives.

### **11. International Low volume road conference – New Pooled Fund Initiative**

Vanessa stated every four years TRB and Low Volume Roads Committee organize the International Low Volume Road conference. Next year the conference will be held in Pittsburgh Pennsylvania on July 21-22, 2015. In the past other agencies help fund this conference and this year the funding has run short. TRB approached Iowa with the idea to lead a pooled fund initiative to allow States to use their SPR dollars towards the support of the conference. We have taken on the lead and are up for solicitation to support the Eleventh International Low Volume Road conference happening next year. Iowa has committed \$8000 dollars and as of now we have a total of six states that have committed \$8000 dollars each to support the conference. By supporting the conference we will get the benefit of being able to send two people to attend the conference. Nicole Fox and Vanessa Goetz have been chosen to represent the Iowa DOT. If we would like to send additional people to this conference we would contribute an additional \$1500 dollars per person.

Wade Weiss has some interest in this conference.

The Board approved 2 County Engineers to attend the Conference every four years.

**Motion to Approve by 1<sup>st</sup> P. Assmann. 2<sup>nd</sup> D. Miller.**

Motion carried with 13 Aye, 0 Nay, 0 Abstaining

## **12. NEW BUISNESS**

Bob Kieffer retired from being a County Engineer this month. Russ Stutt who is the Jasper County Engineer was confirmed by the ICEA board to serve the remainder of Bob's term. In November the ICEA board will assign alternates. Kevin Mayberry will request ICEA consider extending his current term.

## **13. ADJOURN**

**The next meeting of the Iowa Highway Research Board will be held Friday, October 31, 2014, in the East/West Materials Conference Room at the Iowa DOT. The meeting will begin promptly at 9 a.m.**



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**Vanessa Goetz, IHRB Secretary**